

16 December 2024

---

## Agreement

**Concerning the Adoption of Harmonized Technical United Nations  
Regulations for Wheeled Vehicles, Equipment and Parts which can be  
Fitted and/or be Used on Wheeled Vehicles and the Conditions for  
Reciprocal Recognition of Approvals Granted on the Basis of these  
United Nations Regulations\***

(Revision 3, including the amendments which entered into force on 14 September 2017)

---

## Addendum 148 – UN Regulation No. 149

### Revision 1 – Amendment 3

Supplement 3 to the 01 series of amendments – Date of entry into force: 22 September 2024

### **Uniform provisions concerning the approval of road illumination devices (lamps) and systems for power-driven vehicles**

This document is meant purely as documentation tool. The authentic and legal binding text is: ECE/TRANS/WP.29/2024/25 (as amended by paragraph 96 of the report ECE/TRANS/WP.29/1177).

---



**UNITED NATIONS**

---

\* Former titles of the Agreement:  
Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958 (original version);  
Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions, done at Geneva on 5 October 1995 (Revision 2).



*Paragraph 1.*, amend to read:

**“1. Scope**

This Regulation applies to the following road illumination devices (lamps):

- Headlamps emitting a driving-beam and/or an asymmetrical passing-beam for vehicles of categories L, M, N and T
- Adaptive front-lighting systems (AFS) for vehicles of categories M, N and L<sub>3</sub>
- Adaptive Driving-Beam (ADB) for vehicles of category L<sub>3</sub>
- Headlamps emitting a driving-beam and/or a symmetrical passing-beam for vehicles of categories L and T
- Front fog lamps for vehicles of categories L<sub>3</sub>, L<sub>4</sub>, L<sub>5</sub>, L<sub>7</sub>, M, N and T
- Cornering lamps for vehicles of categories M, N and T.”

*Paragraph 3.1.2.2.2. (g)*, amend to read:

“3.1.2.2.2. ...

- (g) The indication(s) according to the provision of paragraph 5.3.5.1. with respect to paragraph 6.22. of UN Regulation No. 48 or paragraph 6.18. of UN Regulation No. 53;

...”

*Paragraph 3.2.*, amend to read:

“3.2. Approval

A separate approval is required for each lamp listed in paragraph 1.

When two or more lamps are part of the same assembly of grouped, combined or reciprocally incorporated lamps, approval is granted only if each of these lamps satisfies the requirements of this Regulation or of another Regulation. Lamps not satisfying any one of those Regulations shall not be part of such an assembly of grouped, combined or reciprocally incorporated lamps.”

*Paragraph 3.2.2.*, amend to read:

- “3.2.2. An approval number shall be assigned to each type approved and shall be marked on the device following the requirements of paragraph 3.3. The same Contracting Party shall not assign the same number to another type of device covered by this Regulation except in the case of an extension of the approval to a front fog lamp differing only in the colour of the light emitted by the lamp.”

*Paragraph 3.2.4.*, amend to read:

- “3.2.4. If approval is sought for an AFS which is not intended to be included as part of the approval of a vehicle type according to UN Regulation No. 48 or if approval is sought for an ADB or AFS for vehicles of category L<sub>3</sub> which is not intended to be included as part of the approval of a vehicle type according to UN Regulation No. 53,”

*Paragraph 3.2.4.1.*, amend to read:

- “3.2.4.1. The applicant shall submit sufficient documentation to prove the capability of the system to comply with the provisions of paragraph 6.22. of the UN Regulation No. 48 or paragraph 6.16. and 6.18. of UN Regulation No. 53 when correctly installed, and”

*Paragraph 3.2.5., Table 1*, amend to read:

“Table 1  
List of symbols/combinations

<i>Lamp (function)</i>	<i>Symbol</i>	<i>Symbol if device is part of a matched pair</i>
Driving-beam headlamp of Class A	R	YR
Passing-beam headlamp of Class V (asymmetrical)	V	YV
Driving-beam headlamp of Class B	HR	YHR
Passing-beam headlamp of Class C (asymmetrical)	C	YC
Auxiliary Driving-Beam of Class RA	RA	-
Adaptive Front lighting System (Class AFS-C): basic passing-beam	XC <sup>3</sup>	-
Adaptive Front lighting System (Class AFS-E): motorway passing-beam	XCE <sup>1, 2</sup>	-
Adaptive Front lighting System (Class AFS-V): town passing-beam	XCV <sup>3, 4</sup>	-
Adaptive Front lighting System (Class AFS-W): adverse weather passing-beam	XCW <sup>3, 4</sup>	-
Adaptive Front lighting System for vehicle of category L <sub>3</sub> (Class AFS-C): basic passing-beam	MXC <sup>3</sup>	
Adaptive Front lighting System for vehicle of category L <sub>3</sub> (Class AFS-E): motorway passing-beam	MXCE <sup>3, 4</sup>	
Adaptive Front lighting System for vehicle of category L <sub>3</sub> (Class AFS-V): town passing-beam	MXCV <sup>3, 4</sup>	
Adaptive Front lighting System for vehicle of category L <sub>3</sub> (Class AFS-W): adverse weather passing-beam	MXCW <sup>3, 4</sup>	
Adaptive Front lighting System (Class AFS-R): driving-beam	XR <sup>3</sup>	-
Passing-beam headlamp of Class AS (symmetrical)	C-AS	YC-AS
Passing-beam headlamp of Class BS (symmetrical)	C-BS	YC-BS
Passing-beam headlamp of Class CS (symmetrical)	WC-CS	YC-CS*
Passing-beam headlamp of Class DS (symmetrical)	WC-DS	YC-DS*
Driving-beam headlamp of Class BS	R-BS	YR-BS*
Secondary driving-beam headlamp of Class CS	WR-CS	YR-CS*
Secondary driving-beam headlamp of Class DS	WR-DS	YR-DS*
Adaptive driving-beam for vehicles of category L <sub>3</sub>	ADB	YADB
Front fog lamp of Class F3	F3	YF3
Cornering lamp of Class K	K	-

\* The symbol “W” is not indicated because deemed unnecessary for these classes as part of a matched pair.”

<sup>1</sup> In the case of a single installation unit the symbol "XC" or "MXC" is marked only once.

<sup>2</sup> In the case of more installation units each providing one or more AFS function(s) each unit is marked with the symbol "X" or "MX" followed by the identification symbol(s) of the specific AFS function(s) provided.

*Paragraph 4.5.3.6.*, amend to read:

- “4.5.3.6. In case of an AFS incorporating light sources and/or light source modules producing the basic passing-beam and having a total objective luminous flux of the lighting units as indicated under item 9.2.3.(a) of the communication form which exceeds  $2.00 \cdot 10^3$  lumen per side, a reference shall be made in the communication form in Annex 1. This information is not necessary in case the AFS is intended for a vehicle of category L<sub>3</sub>.”

*Paragraph 5.3.2.1.*, amend to read:

- “5.3.2.1. For each side of the system (vehicle) or in the case of AFS for vehicles of category L<sub>3</sub> for the system the passing-beam in its neutral state shall produce from at least one lighting unit a “cut-off” as defined in Annex 5 or,”

*Paragraph 5.3.2.2.*, amend to read:

- “5.3.2.2. The system or part(s) thereof shall be aimed according to the requirements of Annex 5 paragraph 3.2. including the allowed specific tolerances of paragraph 4 so that the position of the cut-off complies with the requirements indicated in Table 8. For AFS for vehicles of category L<sub>3</sub> the system or part(s) thereof shall be aimed according to the requirements of Annex 5 paragraph 3.3.

If, however, the vertical adjustment cannot be performed repeatedly to the required position within the allowed tolerances, the instrument method of Annex 6, paragraph 2. shall be applied to the test compliance with the required minimum quality of the asymmetric “cut-off” line or of the symmetric “cut-off” line for AFS for vehicles of category L<sub>3</sub> and to perform the beam vertical adjustment.”

*Paragraph 5.3.2.4.*, amend to read:

- “5.3.2.4. When emitting a specified mode of the passing-beam, the system shall meet the requirements in the respective section (C, V, E, W) of part A of the Table 7 (photometric values) and in Table 8 ( $I_{max}$  and “cut-off” positions), as well as paragraph 2.1. (asymmetric “cut-off” definition) of Annex 5. For AFS for vehicles of category L<sub>3</sub>, when emitting a specified mode of the passing-beam, the system shall meet the requirements for passing-beam of Class DS specified in paragraph 5.4. of this Regulation.”

*Paragraph 5.3.3.4.*, amend to read:

- “5.3.3.4. The system shall be so made that the lighting unit(s) of the right side and of the left side each provide at least  $1.60 \cdot 10^4$  cd at the point HV. In case of ADB for vehicles of category L<sub>3</sub>, each installation unit shall provide at least  $1.60 \cdot 10^4$  cd at the point HV.”

*Paragraphs 5.6.2., 5.6.3. and related sub-paragraphs*, delete.

*Paragraphs 5.6.4., 5.6.4.1. and 5.6.4.2.*, renumber as 5.6.2., 5.6.2.1. and 5.6.2.2., respectively.

*Table 36, Part B*, amend to read:

“...

Part B	Element <sup>a</sup>	Angular coordinates in deg.		Min. luminous intensity <sup>b</sup> in cd		
		vertical	horizontal	▲ 0% CoP	▲ 20% CoP	▲ 30% CoP
	50L	0.86°D	3.43°L	$2.55 \cdot 10^3$	$2.04 \cdot 10^3$	$1.79 \cdot 10^3$
	50V	0.86°D	0°	$5.10 \cdot 10^3$	$4.08 \cdot 10^3$	$3.57 \cdot 10^3$
	50R	0.86°D	1.72°R	$5.10 \cdot 10^3$	$4.08 \cdot 10^3$	$3.57 \cdot 10^3$
	25LL	1.72°D	16°L	$1.18 \cdot 10^3$	$9.44 \cdot 10^2$	$8.26 \cdot 10^2$
	25RR	1.72°D	11°R	$1.18 \cdot 10^3$	$9.44 \cdot 10^2$	$8.26 \cdot 10^2$
...						

*Paragraph 6.2.1.1.4.4.*, amend to read:

“6.2.1.1.4.4. As an alternative to the re-alignment procedure as described in paragraph 4.1. of Annex 5, the intensity requirement of column A, B or C of Tables 21 to 36 for a particular direction of observation shall be deemed to be satisfied if that requirement is met in a direction deviating by not more than one-quarter of a degree from the direction of observation.”

*Figure A13-III, marking examples 3-a and 3-b*, replace examples to read:

**“Marking example 3-a**

17120  30 148R00 149R00	→ A HCR F3 PL	1a
---	---------------	----

**Marking example 3-b**

	→ A HCR F3 PL 1a 17120 148R00 149R00  30	
--	--	--

”

*Annex 1,*

*Item 9.2.9., insert a new footnote 6 to read:*

“6 for AFS for vehicle of category L<sub>3</sub> the information through 9.2.9.2. to 9.2.10.5. are not necessary.”

*Footnotes 6 to 8, renumber as 7 to 9 accordingly.*

*Item 9.4.7., amend to read:*

“9.4.7. Luminous flux of the light source (see paragraph 4.5.3.5. of this Regulation) greater than  $2.00 \cdot 10^3$  lumens: yes/no<sup>2</sup> ”

*Annex 10, Table A10-1, amend to read:*

**“Table A10-1  
Points in time for additional testing**

Lamp (function)	Time after activation (seconds)	Test point
Driving-beam (Headlamp producing only driving-beam)	1	HV
Passing-beam <sup>a</sup>	4	25V(V, 1.72°D)
AFS class C <sup>a</sup>	4	25V(V, 1.72°D)
Front fog	4	V, 2.5°D
Cornering lamp	1	45°L 2.5°D

<i>Lamp (function)</i>	<i>Time after activation (seconds)</i>	<i>Test point</i>
		resp. 45°R 2.5°D

<sup>a</sup> After 1 second it shall meet at least 25 % of the requirement at the test point.”

*Annex 14,*

*Footnote 2 (d), amend to read:*

“(d) Signal status when the respective conditions according to paragraph 6.22.7.4. of UN Regulation No. 48 or 6.18.6.3. of UN Regulation No. 53 are fulfilled.”

*Footnote 5, amend to read:*

“5 Relevant to provisions of paragraph 6.22.6.1.2. of UN Regulation No. 48 or 6.18.5.1. of UN Regulation No. 53.”

---